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ABSTRACT

A 1982 survey requested opinions of 10% of Arkansas's K-12 school principals regarding probable student and teacher response to computers in the classroom, current level of computer literacy among their school teachers, the effect of computers in education (positive or negative), factors most important in future purchase of computer equipment, how computers are presently used, and whether schools in large school districts are more or less likely to have computers than schools in medium or small school districts. Seventy-six principals (64%) returned the surveys. Results suggest that principals strongly support computer use in formal education and believe that their teachers and students would also be avid supporters. Roughly 95% plan to purchase their first or additional computers in the next 5 years. Of schools currently using computers, 100% plan to make further purchases. School district size did not affect attitudes and most respondents indicated agreement concerning the usefulness of the computer in future education. The survey instrument and cover letter are included. (LMM)

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ADMINISTRATORS' PERCEPTIONS OF COMPUTER USAGE IN EDUCATION

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PURPOSE

With the advent of the microcomputer, educators are developing an increased interest in the possibility of using this technology in the formal educational setting. There is a special interest in its application for kindergarten through twelth grade schooling. While there is a great deal of discussion relating to this possibility, relatively little data are available regarding the attitudes that school principals have toward the use of this educational medium in the classroom. Since principals are the chief administrative officers at the school level, their attitudes toward any learning approach are instrumental in guiding the adoption or rejection of the use of computers within their spere of control. For this reason, it is important that the views of these decision makers be studied and taken into consideration when looking at the potential of computers in education.

Research Questions

This study concentrates upon those attitudes which the educational leaders hold. In particular, the subtopics studied were:

A. In the opinion of principals, what would be the probable student response to computers in the classroom?

B. In the opinion of principals, what would be the probable teacher response to computers in the classroom?

C. In the opinion of principals, what is the current level of computer literacy among their school teachers.

D. In the opinion of principals, will the effect of computers in education be positive or negative.

E. In the opinion of principals, which factors are the most important in the future purchase of computer equipment?

F. In the opinion of principals, how are computers presently used in the classroom?

G. Are schools in large school districts more or less likely to have computers than schools in medium or small school districts?

PROCEDURE

In October of 1982, a survey questionnaire was mailed to principals of 10% of the K-12 schools in Arkansas. The schools were selected randomly from three size school districts: small, medium, and large. The response rate to the questionnaire were equivalent among these groups. Sixty-four percent of the institutions surveyed returned the questionnaire (76 respondents).

RESULTS

During the following discussion of the results, the reader may refer to the survey questionnaire included at the end of this report.

Principals in kindergarten through twelfth grade schools were asked to rate the probable student interest in using computers in the classroom. (Question #19 on the survey). The data indicated most of the students would welcome the computer as a part of their

education. Sixteen of the responding principals felt that 91-100% of the students would have a very favorable attitude toward the use of computers in the classroom. As chart 1 shows, the principals believed that there would be little student opposition to the introduction of the computer.

	Responses				
Percent of Students	Very Favorable	Favorable	Neutral	Unfavorable	Very Unfavorable
1-10%	2	11	23	16	9
11-20%	2	9	6	2	0
21-30%	6	11	3	1	0
31-40%	3	3	3	0	0
41-50%	6	5	1	0	0
51-60%	2	2	0	0	0
61-70%	4	1	0	0	0
71-80%	12	0	0	0	0
81-90%	7	0	0	0	0
91-100%	16	8	0	0	0

Table 1. Principals perceptions of student response to the use of computers in the classroom

The results of probable student interest were not particularly surprising. However, the question which dealt with the probable teacher response to using computers in the classroom yielded an unexpected response. (Question 20 on the survey). The principals' responses suggested that, the great majority of

educators in their schools would also support the use of computer technology. In table 2, note that the attitude trends toward the use of computers in the classroom is quite similar between students and teachers.

	Responses				
Percent of students	Very Favorable	Favorable	Neutral	Unfavorable	Very Unfavorable
1-10%	4	11	23	16	9
11-20%	4	9	6	2	0
21-30%	6	11	5	1	0
31-40%	1	3	3	0	0
41-50%	7	5	1	0	0
51-60%	3	2	0	0	0
61-70%	3	1	0	0	0
71-80%	6	0	0	0	0
81-90%	4	0	0	0	0
91-100%	8	8	0	0	0

Table 2. Principals' perceptions of teacher response to the use use of computers in the classroom

Even though the school administrators did think that the majority of their teachers would support the use of computer technology in their classrooms, when asked to indicate the percentage of teachers who presently know how to use the computer for educational purposes, the principals felt that very few of their educators were presently competent in the use of the computer. (Question #17). Seventy-three percent of the school administrators stated that less then 10% of their faculty could use the computer effectively

in the classroom. See table 3.

Percent of computer literate teachers per school	Number of schools	Percent of total number of schools
0-10%	53	72.6
11-20%	8	11
21-30%	8	11
31-40%	1	1.4
41-50%	0	-
51-60%	1	1.4
61-70%	0	-
71-80%	0	-
81-90%	1	1.4
91-100%	1	1.4

Table 3. Percentage of teachers in each school who know how to use a computer for educational purposes.

When questioned regarding the probable teacher interest in receiving instruction on the use of computers, the probable teacher interest level fell. (Question #18). Approximately a third of the principals believed that less than 30% of their faculty would wish to receive instruction in computers. Twenty-two and four tenths percent of the principals felt that 78-100% of the faculty at their schools would want to participate in additional instruction. The mode value on this question was 40-50%., suggesting that about half of the teachers at most schools would be interested in further instruction.

Percent of teachers interested in further instruction	Number of schools	Percent of total number of schools
0-10%	7	10.4
11-20%	10	14.9
21-30%	5	7.5
31-40%	8	11.9
41-50%	12	17.9
51-60%	6	9.0
61-70%	4	6.0
71-80%	4	6.0
81-90%	8	11.9
91-100%	3	4.5

Table 4. Percentage of teachers in each school who would like to receive instruction in the use of computers.

On question #21 of the survey, each administrator was asked to predict the usefulness of computer technology. They clearly thought that the potential effect of computers in the classroom would be a positive force in education. Two thirds of the administrators rated the future effect of computers as very favorable, one third felt the technology would be favorable, and none of the respondents rated the computer as a negative factor.

Response	Number of schools	Percent of total number of schools
Very favorable	44	66%
Favorable	22	33%
Neutral	1	1%
Unfavorable	0	-
Very unfavorable	0	-

Table 5. Administrators' perceptions of potential effect of computers in the classroom.

The principals were asked to indicate the ways in which computers were being used in their schools. The rank order of responses is given in table 6.

Use	Number of schools
Instruction	28
Computer literacy	18
Word processing	11
Record keeping	8
Data manipulation	5
Testing	2
Other	9

Table 6. Rank order of computer usage in schools.

Question #16 presented the principals with a list of eight items that could possibly affect their decision to purchase computer equipment in the future. Respondents were asked to place the items in rank order as to the relative importance each would have in affecting the decision making process.

The most important factors affecting the decision to purchase were:

A. Availability of funds

B. Administrators belief that computers would improve education

C. Student interest

Thirty-eight of the principals rated availability of funds as the number one factor in deciding to purchase or not purchase computers. Forty-nine administrators rated their belief that computers could help students learn as first or second in importance. No respondent rated teacher belief in the computer's potential to help students learn as number one in importance, however, twenty-three principals rated this factor as second in importance.

	Responses					
Importance rating	Student interest	Teacher interest	Teacher belief	Administration interest	Administration belief	Funding
1	10	5	-	2	24	38
2	16	2	23	2	25	4
3	13	3	-	7	-	4
4	10	7	9	7	8	7
5	3	14	-	14	5	3
6	6	15	15	11	-	3
7	-	1	-	1	-	-
8	-	-	6	1	-	-
9	1	2	7	1	1	2

Table 7. Factors affecting the decision to purchase computers.

The principals were asked to look into the future and predict the probability of their schools purchasing one or more computers in the next five years.

The findings were remarkable. Ninety five percent of the administrators expected to purchase more machines in the next five years. All of the school administrators whose school presently owned a computer expected to purchase additional equipment in the next five years.

Finally, data was collected to determine whether the size of a school district in which a school was located was a good predictor of the probability of the individual schools owning one or more computers. As may be seen in table 9, there was no difference of computer ownership among schools located in small, medium, or large school districts. Furthermore, table 9 shows that a school's membership in a small, medium, or large school district does not affect the intention of principals to purchase computers in the future.

	Size District			
	Small	Medium	Large	Total
Own Computers	14	9	14	37
Do not Own Computers	12	13	14	39
Total	26	22	28	76

Table 8. Size of school district vs computer ownership.

	Size of School District			
	Small	Medium	Large	Total
Will Purchase	15	13	17	45
Will not Purchase	1	2	1	4
Uncertain	10	7	10	27
Total	26	22	28	76

Table 9. Size of school district vs probable future purchase of computers.

CONCLUSIONS AND IMPLICATIONS

One of the better known principles of diffusion and adoption of innovations is that, whenever possible, it is desirable to have upper level support within an organization or system. The results of this study suggest that one group of important decision makers in our educational system (the principals) strongly support the use of computers in formal education. These administrators indicated that they believe that their subordinates, teachers and students, would be avid supporters of bringing computer technology into the classroom. Perhaps more important is the fact that the principals themselves seem to have developed a strong committment to the belief that computers will have a positive effect on the education of students in the elementary and higher grade levels. The data show that roughly 95% of these leaders plan to purchase their first computer or additional computers in the next five years. One hundred percent of the principals at schools which presently have computers plan to make further purchases. This information suggests that educators have already developed a readiness to use this educational technology. There doesn't seem to be a

difference between the views of educators in schools located in small, medium, and large size school systems. Most respondents indicated agreement as to the usefulness of the computer in education in the future.

APPENDIX
SURVEY TOOL

School Service Personnal
LEARNING RESOURCES
339 Graduate Education Building
Fayetteville, Arkansas 72701
(501) 575-5100

UNIVERSITY OF ARKANSAS · College of Education

October 18, 1982

Dear Administrator:

This survey is being conducted to learn more about the use of computers in education in Arkansas schools. A random sample of schools has been selected and your institution is among them. Please take time to answer the questions. You will note that we are interested in the responses from schools which do not have computers as well as from those which do use this educational technology. Your input into this survey is invaluable and your responses will be held in confidence.

The survey may be returned in the enclosed self-addressed, stamped envelope. Your effort is appreciated; a prompt reply would aid us greatly.

Thanks again.

Sincerely,

David Carl, Ed. D.
Assistant Professor
Instructional Resources

DC/sb
Encl.

The University of Arkansas is an Equal Opportunity Employer

SURVEY

COMPUTERS IN ARKANSAS EDUCATION

1) Name of school: _____

2) Address: _____

_____

_____

3) Name of county _____

4) How many teachers (FTE) are at your school? _____

5) How many students attend your school? _____

6) What grade levels are included in the school? _____ _____ _____

7) Name of person responding to this questionnaire: _____

8) Title (eg. math teacher, principal, library media specialist) _____

9) Does your school have a computer?

____ YES (please continue answering the questionnaire)

____ NO (please skip to question 15)

10) What type of computer(s) does your school have?

Number of computers	Brand of computer	Model
_____	TRS - 80	_____
_____	APPLE II	_____
_____	PET	_____
_____	ATARI	_____
_____	I.B.M.	_____
_____	OTHER (specify)	_____

11) What date(s) (month/year) did your school purchase the machine(s)?

12) What types of peripheral devices does your school have (eg. printer, plotter, modem, etc)?

13) How is the computer used in your school?

_____ Instruction

_____ Record keeping

_____ Teaching computer literacy

_____ Testing

_____ Data manipulation (calculating machine)

_____ Word processing

_____ Other, please specify_____

14) What equipment problems have you experienced with your computer and peripherals? Do you believe that these problems affected the education of your students?

15) Are there plans to purchase one or more machines in the next five years?

_____ YES _____NO _____UNCERTAIN

16) Which of the following factors affect the decision to purchase or not purchase computers for use in your school?
(List the factors in order of importance from 1 to 9. Consider 1 to be the most important factor and 9 to be the least important).

_____ Student interest

_____ Teacher interest in using the computer for keeping track of student progress and records

_____ Teacher's belief that computers will significantly help their students learn

_____ Administration interest in using the computer for management purposes

_____ Administrators' belief that computers will significantly help their students learn

_____ Availability of funds

_____ Other reasons: _____

_____

_____

_____

_____

17) Approximately how many teachers presently know how to use a computer for educational purposes?

____0% to 10% _____11% to 20% _____ 21% to 30% _____31% to 40% _____41% to 50%
____51% to 60% _____61% to 70% _____ 71% to 80% _____81% to 90% _____91% to 100%

18) How many teachers (including those who presently know how to use computers) would like to receive instruction on the use of the computer in the classroom?

____0% to 10% _____11% to 20% _____21% to 30% _____31% to 40% _____41% to 50%
____51% to 60% _____61% to 70% _____71% to 80% _____81% to 90% _____91% to 100%

19) In your opinion how would students respond to the use of a computer in the classroom?

percent of students (approx.)	Response
_____	Very favorable
_____	Favorable
_____	Neutral
_____	Unfavorable
_____	Very unfavorable

20) How would the teachers respond to the use of computer in the classroom?

Percent of teachers (Approx.)	Response
_____	Very favorable
_____	Favorable
_____	Neutral
_____	Unfavorable
_____	Very unfavorable

21) In your opinion, what is the potential effect of the use of computers in the classroom?

_____ very favorable

_____ favorable

_____ neutral (no effect)

_____ unfavorable

_____ very unfavorable

22) Would you like a copy of the results of this study?

_____YES _____ NO